
CLAIMS

- 5 1. A device for gravel packing, in particular for water wells, the device having a generally vertical cemented casing (1) and a stop-sand liner hanger (2), characterised in that said casing (1) comprises three bearing elliptical balls (13) located on the inner surface of the casing (1) at the same level adjacent its bottom, said stop-sand liner hanger (2) comprising a gravel ports pipe (12), and a gravel setting tool guide pipe (11) around which is fixed at the top end an upper external stop-ring (4) below which are freely adjusted at least one rubber packer (6) between an upper rubber packer protection ring (5) and a push-up ring (9), said rubber packer (6) being compressible by the push-up ring (9) when the latter comes to rest on the three bearing (13) which produces a relative upwards movement of the push-up ring (9) over the gravel setting tool guide pipe (11) against the downwards action of the weight of the stop-sand liner hanger (2) and underlying screens/liners (15, 14), said compression increasing the external diameter of the rubber packer (6) sealing off the annulus (3) between the cemented casing (1) and the stop-sand liner hanger (2).
- 20 2. A device for gravel packing according to claim 1, wherein the gravel ports pipe (12), which has three gravel ports (27), contains inside its inner diameter a gravel ports piston (20) which is placed above a spring case (17), said piston (20) resting on a spring (18) receives in its inside profile a gravel pack setting tool (23), said spring (18) being compressed under the weight of the gravel pack setting tool (23) when the latter is positioned inside the SSLH (2) causing the downwards movement of the gravel ports piston (20) and causes the opening of the gravel ports by the juxtaposition of gravel ports (27) of the pipe (12) and ports (28) of said piston (20).
- 30

~~3. A device for gravel packing according to claim 2, wherein three guide plates~~
(16) are fixed at angles of 120° inside the gravel setting tool guide pipe (11),
said guide plates (16) axially adjust the gravel setting tool gravel ports (31)
with the piston gravel ports (28).

5
4. A device for gravel packing according to claim 1, or 3, wherein the three
elliptical balls (13) are located at angles of 120° .

10
5. A device for gravel packing according to any one of the preceding claims
wherein an upper rubber packer (6) and a lower rubber packer (8) are freely
adjusted around the said gravel setting tool guide pipe (11), the said upper
and lower rubber packers (6, 8) being adjacent to an intermediate rubber
packer protection ring (7) on one side and to respectively an upper rubber
packer protection ring (5) and a push-up ring (9) on the other side.

15

20

25

30